



## TO-92 Plastic-Encapsulate Transistors

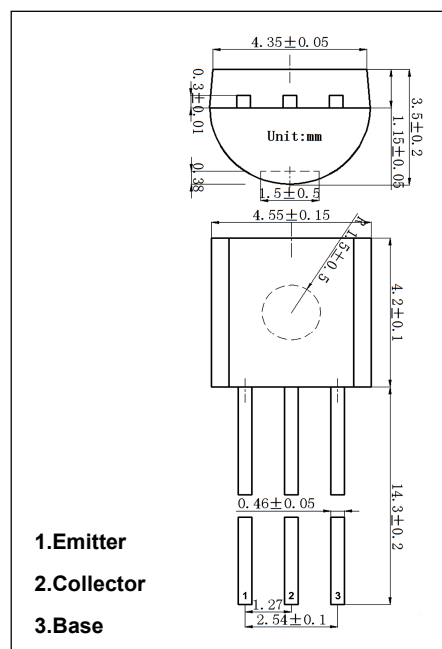
### ALJ13002 NPN Transistors

#### Features

- Power Switching Applications

#### Maximum Ratings (T<sub>a</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector Base Voltage	600	V
V <sub>CEO</sub>	Collector Emitter Voltage	400	V
V <sub>EBO</sub>	Emitter Base Voltage	6	V
I <sub>C</sub>	Collector Current -Continuous	0.3	A
P <sub>C</sub>	Collector Power Dissipation	0.9	W
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	-55~150	°C



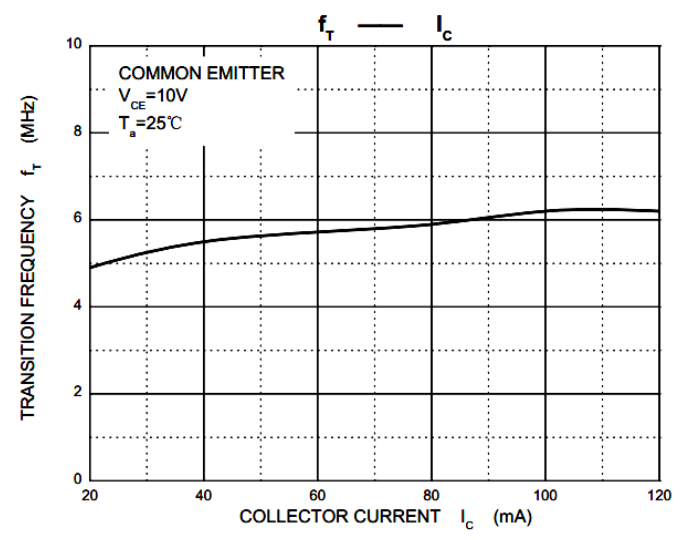
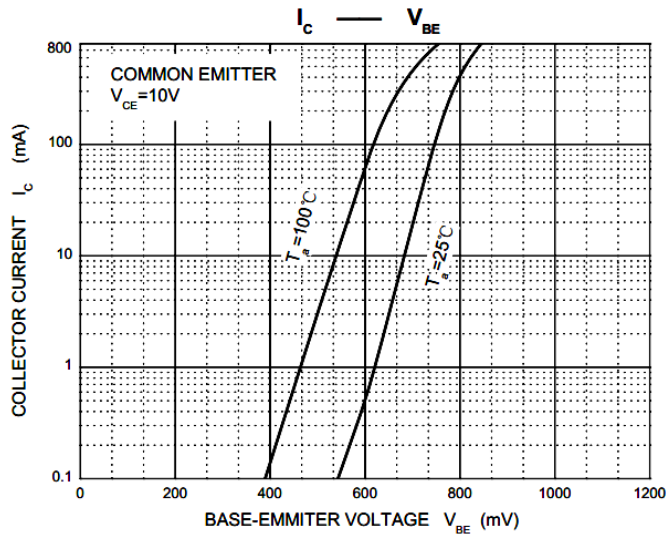
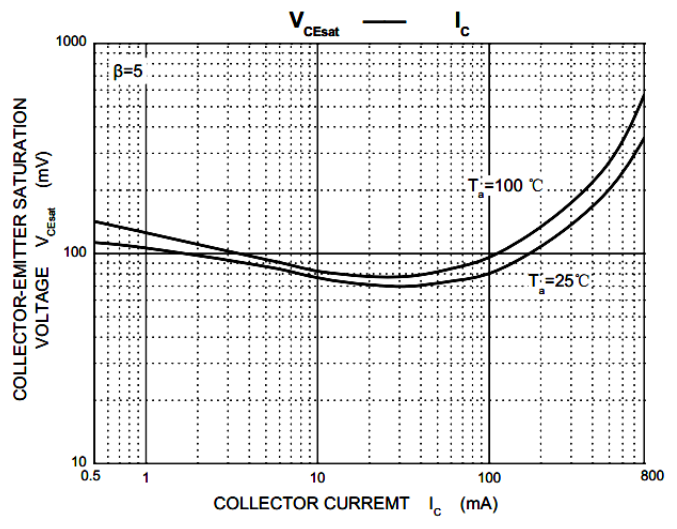
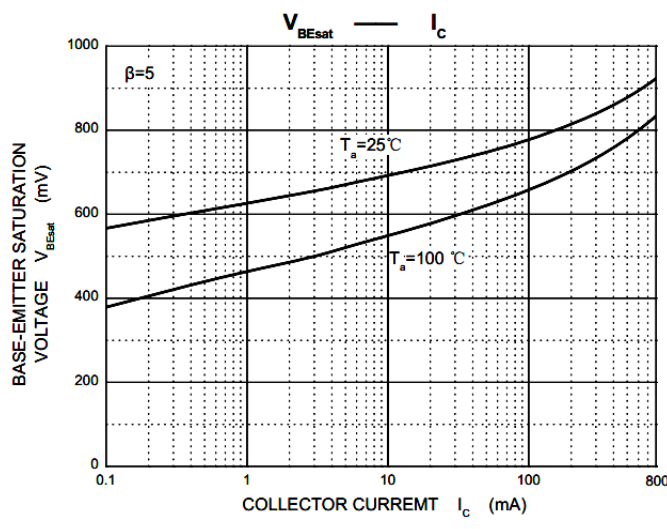
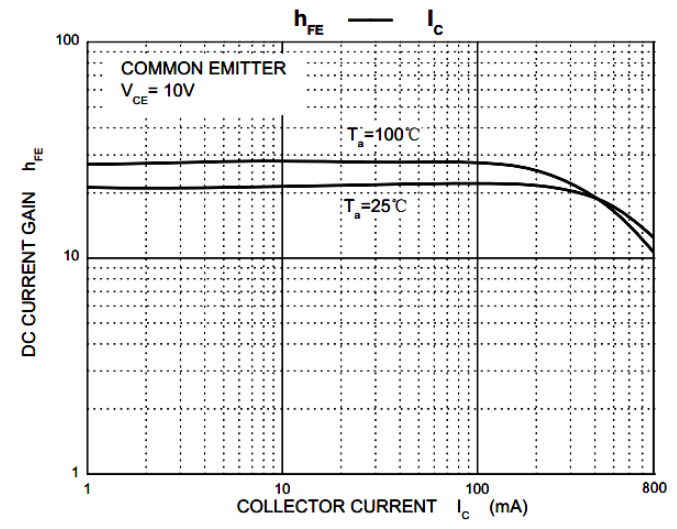
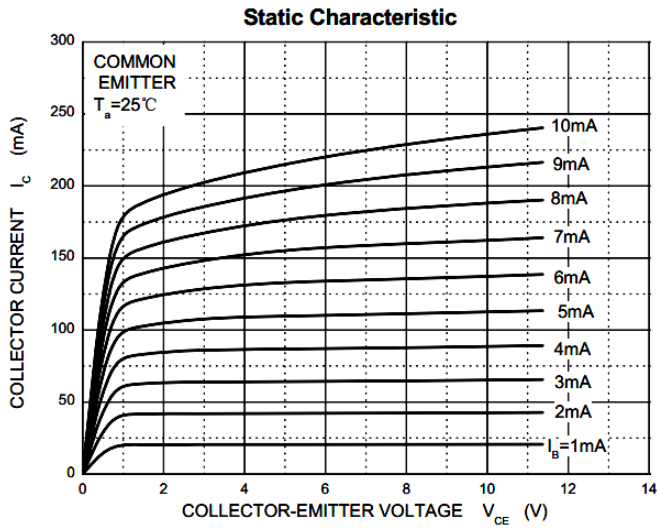
#### Electrical Characteristics (T<sub>a</sub>=25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> =100μA, I <sub>E</sub> =0	600			V
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =1mA, I <sub>B</sub> =0	400			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =100μA, I <sub>C</sub> =0	6			V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> = 600V, I <sub>E</sub> =0			100	μA
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> = 400V, I <sub>B</sub> =0			100	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> = 6V, I <sub>C</sub> =0			100	μA
h <sub>FE(1)</sub>	DC current gain	V <sub>CE</sub> =10V, I <sub>C</sub> =200mA	9		40	
h <sub>FE(2)</sub>		V <sub>CE</sub> =10V, I <sub>C</sub> =0.25mA	5			
V <sub>CE(sat)</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =200mA, I <sub>B</sub> =40mA			0.5	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> =200mA, I <sub>B</sub> =40mA			1.1	V
f <sub>T</sub>	Transition frequency	V <sub>CE</sub> =10V, I <sub>C</sub> =0.1A, f =1MHz	5			MHz
t <sub>f</sub>	Fall time	I <sub>C</sub> =1A, I <sub>B1</sub> =-I <sub>B2</sub> =0.2A V <sub>CC</sub> =100V			0.5	μs
t <sub>s</sub>	Storage time				2.5	μs

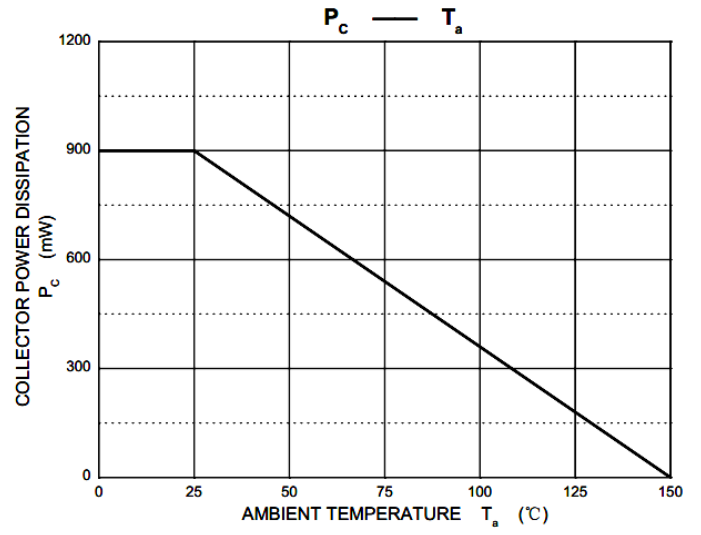
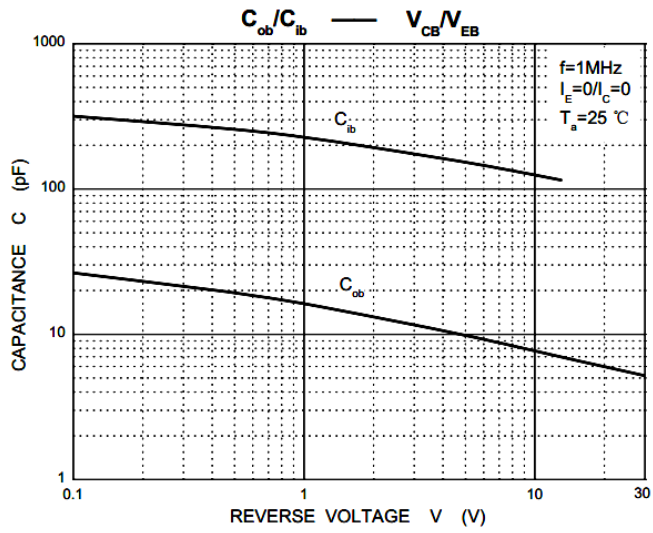
#### Classification OF h<sub>FE1</sub>

Range	9-15	15-20	20-25	25-30	30-35	35-40

# Typical Characteristics



## Typical Characteristics (Continued)



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